Wagyu feeding technique for high quality beef production

Beef Cattle Symposium
Antalya / Turkey
May 08th and 11th 2014.

Belltree Australia PTY LTD
Takao Suzuki
Farm Location

- Blue Mountains – 100km west of Sydney
Belltree Australia Operation

- Fullblood Wagyu Breeding : 70 head
- Fullblood Wagyu Feeding : 80 head
- Angus F1 production : 40 head
Work Experience

- Dairy farm in Japan 1997
- Japanese feedlot (7,500 head) 1990 ~ 1991
- Australian feedlot (35,000 head) 1991 ~ 2006
- Establish Belltree Australia PTY LTD in Blue mountains 2007 ~
What is Wagyu?

- The word ‘wagyu’ is a Japanese-language ‘wa-gyu’, which simply means ‘Japanese produced beef cattle’. It does not describe any single breed.

- Japanese Black >90% of Wagyu trade in Japan
Beef Production Trend in Japan

Beef Cattle Slaughter Number in Japan

- **F1 Slaughter Number**
- **Wagyu Slaughter Number**
- **Holstein Slaughter Number**
## Beef Retail Price in Japan

<table>
<thead>
<tr>
<th></th>
<th>Wagyu</th>
<th>F1</th>
<th>Holstein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chuck</td>
<td>617</td>
<td>441</td>
<td>299</td>
</tr>
<tr>
<td>Brisket</td>
<td>616</td>
<td>464</td>
<td>313</td>
</tr>
<tr>
<td>Sirloin</td>
<td>1,157</td>
<td>844</td>
<td>599</td>
</tr>
<tr>
<td>Butts</td>
<td>602</td>
<td>439</td>
<td>332</td>
</tr>
</tbody>
</table>
Australian Wagyu

- Semen & embryos exported from Japan to USA in 1995
- Wagyu livestock and semen were imported from USA to AUS from 1996~
- “Wagyu” infused cattle feeding is popular through domestic/export market
- Wagyu is registered to Australian Wagyu Association database with DNA profile
- Mainly feeding at western style feedlot or grass fed
Wagyu Beef
Wagyu Beef
Wagyu Beef Characteristics

- Marbling – Intramuscular Fat
- Fatty Acid Composition
  - High MUFA (Approx >53%)
  - High Oleic Acid (18:1)
  - Low Melting Point (<26°C)
- Texture – Firm
- Tender
- Unique Flavor
Wagyu Production
Japanese Style Feeding
Japanese Style Feeding

- Total growth management to meet nutritional requirements of cattle at each stage
- Specially formulated ration
- Selected feed ingredients for fatty acid composition and flavor
- Feeding up to 30 month old
- Minimize cattle stress
- Managing small group
Feed Ration

- **STARTER** - Pre/Post weaning
  - CP ~ 22%
  - TDN 78%
  - ADF 14%
  - Ad-rib Hay Feeding
  - Target Consumption 0.5 ~ 2kg

- **GROWER** - Post Weaning ~ 13 month Old
  - CP ~16%
  - TDN 76 ~ 78%
  - ADF 12%
  - High Roughage Contents(Pasture Hay, Alfalfa etc)
  - Target consumption 2 ~ 6kg (60% Ration, 40% Hay)

- **FINISHER** - 14 ~ 30 month old
  - CP ~12%
  - TDN 78%+
  - ADF 12.5%
  - Roughage with No Vitamin A (Straw)
  - High Grain Contents (70% +)
  - Target consumption 7 ~ 10kg (80% Ration, 20% Straw)
Example of Wagyu Feed Ingredients

- **GRAIN**
  - **Barley** – High Crude Fibre
    - Steam Flaked – High Digestibility
  - **Corn** – High Energy, Good Fat
    - Steam Flaked – High Digestibility
    - Hominy Feed – High Crude Fiber
Example of Wagyu Feed Ingredients

- **PROTEIN**
  - Soybean Meal – high in lysine
  - Canola Meal
Example of Wagyu Feed Ingredients

**BY-PRODUCTS**

- **Wheat Bran** – High Fiber
- **OKARA** (By-Products of Soy Milk) – High Crude Protein
- **Nuts Husk** – High Fiber
- **Barley Husk** – High Fiber
Example of Wagyu Feed Ingredients

- **Mineral**
  - **Salt** – Balance Mineral
  - **Lime Stone** – Balance out P : Ca to 1 : 2 (prevention of Kidney Stone)
Example of Wagyu Feed Ingredients

- **ROUGHAGE**
  - **Grasses Hay** (Ryegrass, Bermuda)
    - Soft fiber and easy to digest
  - **Alfalfa Hay (Lucerne)**
    - High CP, Rich in Vitamin A
  - **Rice Straw/ Wheat Straw**
    - High Fiber
    - No Vitamin A
Example of Wagyu Feed Ration

<table>
<thead>
<tr>
<th></th>
<th>Starter</th>
<th>Grower</th>
<th>Finisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>25.00%</td>
<td>22.00%</td>
<td>35.00%</td>
</tr>
<tr>
<td>Barley</td>
<td>25.00%</td>
<td>22.00%</td>
<td>25.00%</td>
</tr>
<tr>
<td>Wheat Bran</td>
<td>10.00%</td>
<td>15.00%</td>
<td>19.00%</td>
</tr>
<tr>
<td>Soybean Meal</td>
<td>13.00%</td>
<td>11.00%</td>
<td>8.00%</td>
</tr>
<tr>
<td>Barley Straw</td>
<td>0.00%</td>
<td>7.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Nuts Husk</td>
<td>0.00%</td>
<td>0.00%</td>
<td>3.00%</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>15.00%</td>
<td>7.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Alfalfa Meal</td>
<td>10.00%</td>
<td>10.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Wheat Straw</td>
<td>0.00%</td>
<td>4.00%</td>
<td>4.00%</td>
</tr>
<tr>
<td>Wheat Husk</td>
<td>0.00%</td>
<td>0.00%</td>
<td>4.00%</td>
</tr>
<tr>
<td>Limestone</td>
<td>1.00%</td>
<td>1.00%</td>
<td>1.00%</td>
</tr>
<tr>
<td>Salt</td>
<td>1.00%</td>
<td>1.00%</td>
<td>1.00%</td>
</tr>
</tbody>
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**The rations are example only**
Feeding Program

- 0 – 3 month – Grazing/ Starter Ration
  - Early weaning to ensure their growth and getting ready for grain feeding program
Feeding Program

- 3 – 13 month – Weaners/ Grower Ration + Hay
  - Ensure the roughage consumption to develop rumen size and muscle growth
Feeding Program

- 14 – 30 month – Feeders/ Finisher Ration + Rice Straw
  - Restrict Vitamin A consumption and maximize feed consumption until last minutes to develop marbling
Why Japanese Style??

- **Managing animal in small group**
  - Minimize variation in feed consumption
  - Managing by age group to control ration changes

- **Managing animal in shed**
  - Minimize stress of environment effect
  - Minimize feed wastage

- **Japanese Style Feed Ration**
  - Maximize marbling ability
  - Maximize eating quality by control fatty acid composition
    (MUFA : BMW 57.1% VS Angus 49.6 )
Key Point of Wagyu Feeding

- **Start at Young Age**
  - Early weaning and supplement nutrition is essential for Wagyu calf growth because milk production of Wagyu cow is limited.
  - Muscle development at young age will determine beef yield

- **Develop Rumen Condition with good quality Roughage**
  - Rumen conditioning at post weaning age (4 ~ 9month old) is essential to enhance high feed consumption for later stage
  - Roughage consumption will increase rumen sizes and maintaining rumen bacteria population

- **Maintain Feed Consumption**
  - Maintaining feed consumption as long as possible is key to increase marbling score. Irregular feed consumption will induce gastrointestinal problem and hence low meat quality.